



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,585	01/29/2004	Reinhold Bruestle	147261	6183

7590 10/02/2006
Dean D. Small
Armstrong Teasdale LLP
Suite 2600
One Metropolitan Square
St. Louis, MO 63102

EXAMINER

JAWORSKI, FRANCIS J

ART UNIT	PAPER NUMBER
----------	--------------

3768

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/767,585

Applicant(s)

BRUESTLE, REINHOLD

Examiner

Jaworski Francis J.

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/15/04 IDS.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4-15-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 7, 9, 11 - 23 are rejected under 35 U.S.C. 102(b) as being anticipated by either Barthe et al (US6120452) or Flesch (US6425870).

[It is noted that wet/dry chamber partitioning associated ultrasound scanheads having mechanically movable transducer portions for which a flexible connection member is desirable for strain relief purposes include those in which the principal mechanical movement is the high speed scan sweep (which is represented by Barthe et al) and those such as in transesophageal probes where the principal mechanical movement is rotation of the scan plane of a phased array at a low speed to a new orientation (represented by Flesch). Since no claim among those presented differentiates between these two categories the Examiner is arguing the two reference types in generally parallel arguments for simplicity's sake.]

Both reference types contain wet and dry chambers with a partitioning membrane wall or seal traversed by a flex circuit connection member for connecting an array to the probe output cabling for implementing array control methods. In the case of Barthe et al the flex circuit connection member crosses the chamber partition through an epoxy

Art Unit: 3768

junction; in the case of Flesch the flex circuit connector crosses via a silicone or polyurethane glue juncture. These hardened glue junctures which fix the connection member to the partition seal constitute a relatively rigid portion in relation to the flexible portions of the connecting member within the wet chamber.

Since a flex circuit is also known as a printed circuit board in this art, the above argument may be re-stated as pertaining to flexible printed circuit board and rigid printed circuit board portions of the connecting member.

Otherwise the rigid portion as defined is sealingly engaged with the seal about the seal opening, and the probe component portions may be termed modular until assembled into a unitary device housing the respective 1D arrays.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthe et al or Flesch as applied to claim 1 above, and further in view of either a) Ingebrigtsen et al (US5085221) alone or further in view of Flesch et al (US6733457) or b) Pawluskiewicz (US6007490) alone or further in view of Ingebrigtsen et al or Flesch et al ('457).

Under argument a)

If the former be viewed as falling short of anticipation e.g. under the argument that a glue glob may remain soft at a wetness barrier such as is the case with with certain plumbing sealants and therefore in which case the connecting member would lack a rigid portion at the seal, it would nonetheless have been obvious in view of Ingebrigtsen et al for a flex circuit connecting member 12 (to which the primary flex circuit connecting member 11 for this mechanical sector scanhead of the Barthe et al type connects) to connect to rigid pins 3A,3B of plug 3 which pins form part of that seal to the wet chamber. And insofar as it is not literally stated in the latter that there is a dry chamber beyond the plug (which is a reasonable assertion absent any further information since the fluid-filled scanhead is detachable) then it would have been further obvious in view of Flesch et al that this is the case, since the latter notes col. 4 lines 57 – 60 that the presence of an O-ring such as depicted on the perimeter of plug 3 in Ingebrigtsen et al would suggest a transition from a wet to dry chamber environment.

Under argument b)

If the primary references be viewed as falling short of anticipation for the reason above, then it would have been nonetheless have been obvious in view of Pawluskiewicz to have a rigid connector such as 40, 42 for flex circuit connection member 18 as it exits the scanhead chamber, albeit that the latter does not per se associate with mechanical movements within the scanhead, since this allows servicing of the scanhead components without damaging or disrupting the scanhead housing integrity. In the alternative, this argument is supported by the fact that Ingebrigtsen et al evidences that it was known to provide a rigid connection across the seal or plug 3 as

Art Unit: 3768

the scanhead interior boundary, in the alternative still, Flesch et al further evidences that it was known to provide a flex circuit connection such as Pawluskiewicz et al's 40. 42 in the vicinity of the seal anyway, see connector 16 of the latter.

[In effect arguments a) and b) are respectively arguing the obviousness of a non-disconnectable rigid connection across the seal and a disconnectable one, and the Flesch et al patent has a different secondary role in the respective arguments.]

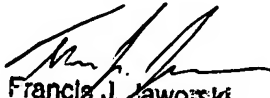
Flesch et al '457 otherwise terms the flexible circuit a PCB or printed circuit board and therefore the flex circuit proper is a flexible PCB and the connector 16 as incorporates into a seal connection is the rigid PCB portion.

Ingebrigtsen et al in either case has a rigid solder junction as an interconnection member between 11 and 12 or between 12 and 13, and the pins 3A, 3B may be considered to be integral with plug 3 as a one-piece unit..

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.

FJJ:fjj

092306


Francis J. Jaworski
Primary Examiner